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REED INTELLECTUAL PROPERTY LAW GROUP
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| EXAMINER |
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GOFF II, JOHN L

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| ART UNIT | PAPER NUMBER |
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1733

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/734,008

Applicant(s)

BUNCH ET AL.

Examiner

John L. Goff

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 27-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/10/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-26, drawn to a method of bonding, classified in class 156, subclass 335.
 - II. Claims 27-34, drawn to an adhesive, classified in class 528, subclass 129.
2. The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP § 806.05(h)). In the instant case the product as claimed can be used in a materially different process such as bonding other than a ceramic material to a manufacturing tool.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.
5. During a telephone conversation with Harry Thibault on 1/27/06 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-26. Affirmation of this election must be made by applicant in replying to this Office action. Claims 27-34 are

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withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

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invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 19-25 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Hacker et al. (U.S. Patent Application Publication 2002/0002265).

Hacker et al. disclose a resist adhesive useful in the microelectronics industry that has excellent planarization properties and does not fume or smoke on heating. Hacker et al. teach the resist adhesive comprises a novolac resin and a solvent added thereto, and Hacker et al. teach following application of the resist adhesive to a microelectronics substrate (e.g. a wafer) the resist adhesive undergoes heating conditions to remove the solvent from the resist adhesive and bond the resist adhesive to the substrate (Paragraphs 5, 8, 18, 19, 21, and 22).

Regarding claims 19, 21, 24, and 25, Hacker et al. teach the solvent comprises for example (only) ethyl acetate (a solvent having a boiling point of 77 °C) such that the claim limitations are met (Paragraph 18). In any event, it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine the particular solvent from the list taught by Hacker et al. as a function of the planarization properties of the resist adhesive as doing so would have required nothing more than ordinary skill and routine experimentation.

Regarding claim 20, Hacker et al. teach the novolac resin is present in the resist adhesive in an amount of 1 to 90 wt.%, e.g. preferably about 10 to about 50 wt.%, such that the claim limitations are met. In any event, it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine the particular novolac resin content

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within the range taught by Hacker et al. as a function of the planarization properties of the resist adhesive as doing so would have required nothing more than ordinary skill and routine experimentation.

Regarding the limitation “for use in bonding a ceramic material to a manufacturing tool” as stated in the preamble, it is noted this limitation is merely intended use and is given little weight to further limit the scope of the claims as no further structural limitations are required, it being noted the improved adhesive produced by Hacker et al. is capable of being used in this manner (See MPEP 2111.02).

Claim Rejections - 35 USC § 103

11. Claims 1-9, 12-17, and 19-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruiz (U.S. Patent 5,406,694) in view of Hacker et al.

Ruiz discloses a method of forming a slider for a hard disk drive including providing a ceramic chunk (40 of Figure 6) from a wafer and bonding the air bearing side of the ceramic chunk to a ceramic planarization manufacturing tool (50 of Figure 6), i.e. the tool ensures the chunk maintains its original straightness/flatness throughout the processing of the chunk, through a layer of resist adhesive (Figure 6 and Column 1, lines 6-8 and Column 5, lines 35-38 and Column 7, lines 38-49). Ruiz does not specifically describe using a resist adhesive including a solvent. It would have been obvious to one of ordinary skill in the art at the time the invention was made to adhere the ceramic chunk to the ceramic planarization manufacturing tool as taught by Ruiz using the resist adhesive including solvent taught by Hacker et al. which has excellent planarization properties. Hacker et al. is described above in full detail.

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Regarding claims 1, 5, 8, 9, 15, 17, 19, 21, 24, and 25, Hacker et al. teach the solvent comprises for example (only) ethyl acetate (a solvent having a boiling point of 77 °C) such that the claim limitations are met (Paragraph 18). In any event, it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine the particular solvent from the list taught by Ruiz as modified by Hacker et al. as a function of the planarization properties of the resist adhesive as doing so would have required nothing more than ordinary skill and routine experimentation.

Regarding claims 2-4 and 20, Hacker et al. teach the novolac resin is present in the resist adhesive in an amount of 1 to 90 wt.%, e.g. preferably about 10 to about 50 wt.%, such that the claim limitations are met. In any event, it would have been obvious to one of ordinary skill in the art at the time the invention was made to experimentally determine the particular novolac resin content within the range taught by Ruiz as modified by Hacker et al. as a function of the planarization properties of the resist adhesive as doing so would have required nothing more than ordinary skill and routine experimentation.

12. Claims 10, 18, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruiz and Hacker et al. as applied to claims 1-9, 12-17, and 19-25 above, and further in view of Uetani et al. (U.S. Patent Application Publication 2001/0026905).

Ruiz and Hacker et al. as applied above teach all of the limitations in claims 10, 18, and 26 except for a specific teaching of using acetone as the solvent, it being noted Hacker et al. teach using ketones as the solvent. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the solvent in Ruiz as modified by Hacker et al.

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those well known in the art including ketones such as acetone as shown for example by Uetani et al. as only the expected results would be achieved.

Uetani et al. are exemplary of a known resist adhesive useful in bonding to a wafer wherein the resist adhesive comprises novolac resin and solvent, the solvent being substantially the same as those taught by Hacker et al. including ketones such as acetone (Paragraphs 1, 10, and 22).

13. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ruiz and Hacker et al. as applied to claims 1-9, 12-17, and 19-25 above, and further in view of Schafer (U.S. Patent 5,421,88).

Ruiz and Hacker et al. as applied above teach all of the limitations in claim 11 except for a specific teaching of using vacuum conditions to remove the solvent from between the ceramic chunk and ceramic planarization manufacturing tool, it being noted Hacker et al. teach using heat to remove the solvent. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in Ruiz as modified by Hacker et al. vacuum conditions as well as heating conditions to remove the solvent from the adhesive as it was well known in the art to use vacuum in addition to heat to remove the solvent from an adhesive as shown for example by Schafer to remove substantially all air bubbles and solvent inclusions within the adhesive.

Schafer is exemplary of the known technique for removing solvent from an adhesive in the microelectronics industry by applying vacuum and heat conditions to the adhesive to remove substantially all air bubbles and solvent inclusions within the adhesive (Column 1, lines 29-34 and Column 3, lines 30-39).

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14. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hacker et al. in view of Uetani et al.

Hacker et al. is described above in full detail. Hacker et al. are silent as to a specific teaching of using acetone as the solvent, it being noted Hacker et al. teach using ketones as the solvent. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use as the solvent in Hacker et al. those well known in the art including ketones such as acetone as shown for example by Uetani et al. as only the expected results would be achieved. Uetani et al. is described above in full detail.

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Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John L. Goff** whose telephone number is **(571) 272-1216**. The examiner can normally be reached on M-F (7:15 AM - 3:45 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John L. Goff